

T-TYPE CALCIUM CHANNEL

ABSTRACT OF THE DISCLOSURE

The present invention is directed to isolated
5 nucleic acid molecules encoding pancreatic T-type calcium
channels. Expression vectors and host cells comprising
the nucleic acid molecules are also provided, as well as
methods for increasing or decreasing the expression of
pancreatic T-type calcium channel in host cells. The
10 invention further provides a method of screening a
substance for the ability of the substance to modify T-
type calcium channel function, and a method for isolating
other pancreatic T-type calcium channel molecules. DNA
oligomers capable of hybridizing to the nucleic acid
15 molecule encoding the pancreatic T-type calcium channel
are provided, which can be used to detect pancreatic T-
type calcium channel in a sample. An isolated pancreatic
T-type calcium channel protein is also provided.
Antibodies specific for the protein, and fragments
20 thereof, are provided, as are compositions comprising the
protein and a compatible carrier. The subject invention
further provides a method of modifying insulin secretion
by pancreatic beta cells, a method of treating type II
diabetes in a subject, a method of modifying basal
25 calcium levels in cells, a method of modifying the action
potential of L type calcium channels in cells, a method
of modifying pancreatic beta cell death, a method of
modifying pancreatic beta cell proliferation, and a
method of modifying calcium influx through L type calcium
30 channels in cells.